# STRATEGIES TO COPE WITH STRESS AMONG CONSTRUCTION PROFESSIONALS: AN INTEGRATED PERSPECTIVE

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**ABSTRACT**

Stress is a major concern in the construction industry (ci), with work overload, time pressure, a number of organizational tasks and physical demands as the common stressors. Although stress in the ci has been studied extensively, there is a lack of clarity on the ways to cope with it. Based on these considerations, the current work is aimed at identifying factors that contribute to stress among industry professionals, considering the coping strategies they should use and examining the effects of stressors on their health and well-being. A descriptive review of the current literature was conducted on stress and coping strategies in construction. The methodology applied was a descriptive review, using different databases and specific keywords terms. The coping strategies applicable include both adaptive and non-adaptive strategies. The use of adaptive coping strategies determines an increment of job performance, positive outcomes and personal growth. On the contrary, the use of non-adaptive coping strategies has detrimental effects on industry professionals' physical and mental well-being with little consideration given to the spill over effects of work stress to their family and social relationships. Recommendations for improving coping include both promoting the use of effective coping strategies and maintaining supportive social relationships, supporting training and education of professionals, and improving research in the ci using an integrated perspective.

Keywords: Construction industry, Coping, Job, Psychological effects, Stress.

## INTRODUCTION

### Context

Many people cope with high stressful conditions at work. People who cannot manage high stress levels at work may cause problems to themselves and to others too. Construction workers and professionals are constantly exposed to varying stressors in their working environment and are likely to experience a high number of difficulties. Coping affects the cognitive and behavioural efforts an individual exerts during stressful situations and is considered to be a moderator/mediator of stress (reference). But, what do we mean by coping? Addressing that question, the present article tries to describe the relationships of coping to the behaviour of individuals, especially in the construction context. First the coping literature is briefly contextualised. The theoretical linkages between stress and its consequences in the Construction Industry (CI) are then explored. Finally, the practical implications of coping in the construction

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setting, as a particular field but of great interest for Construction literature, are discussed. The implications for research are specified throughout the article.

The current work is informed by a descriptive literature review of the operationalization of the construct of coping and associated individual stress factors aimed at delineating the main and newest research in the CI. A descriptive review was carried out, focused on revealing an interpretable pattern from the existing literature. This review method has a systematic procedure including searching, filtering, and classifying processes but it does not use quantitative methods to synthesize and summarize the results like systematic reviews or meta-analyses (Okoli, 2015). The following databases were consulted: EBSCO Host, ABI/INFORM Global, Business Source Complete, PsycINFO and Scopus. The literature search used the following terms, with synonyms and closely related words: "coping" combined with "stress" and "Construction Industry". The full list of sources and the search strategy are available from the authors. The findings from the literature review are presented in the following sections.

**Coping and Theory**

In Psychological research, one of the most accredited definitions of coping derives from the original work of Lazarus and Folkman (1984) in which coping was defined as "*constantly, changing cognitive and behavioural efforts a person makes to manage specific external or internal demands that are appraised as taxing or exceeding the resources of the person*" (p. 141).

Coping refers to the relationship between an individual and an environment where that relationship is perceived as stressful or very demanding (Latack and Havlovic, 1992; Folkman, 2013). This construct stems from classic plasticity theory, as described by the evolutionary development biologists (Huxley, 1958), which hypothesizes that adjustment to an ever-changing environment necessitates an adaptive response system identified by a wide selection of responses for managing different difficult events.
Historically, coping has most often been studied in relation to its efficiency in regulating distress in the health domains. This perspective is absolutely understandable given the history of coping and its origins in health psychology e.g. Menninger's (1963) classic model in which the main endpoint was the regulation of anxiety.

Moving on to the context of organisations, it is important to take into account an approach that looks into the peculiar characteristics of organizations, an approach that examines the stress process and its peculiar features in organizations. Each organization has peculiar features that distinguishes it such as a particular climate, a distinctive culture, rules and procedures (formal and informal) that all highly impact on the individuals, on their emotional states, well-being, behaviour and health in general (Smallwood, 1997). This means that different organizations may generate different impacts on individuals, and by extension, different stress and different modalities to react to this stress. The relationship between stressors and coping is influenced by the nature, number, and persistence of the stressors as well as an individual's natural vulnerability (i.e., genetics, biological factors), psychosocial resources, and learned patterns of coping (Schulz et al., 2013). Among the different types of organizations and settings, a particular sector is represented by the CI.

## MAIN DISCUSSION

*Why stress in construction*

The CI is characterized by a number of dangerous tasks and activities that may determine pressure and stress (Smallwood & Ehrlich, 1997; Haynes & Love, 2004). Stress in the CI is strongly related to the type of actions that are generally connoted by time-pressure and uncertainty-tolerance (Love, Edwards & Irani, 2010). For project managers, the durations of projects are often time-consuming (Dembe *et al*., 2005), and the ability to finish projects on time, and to accomplish mandatory goals is often prejudiced by unforeseen events such as incidents and calamities (Lingard, Francis & Turner, 2010). For workers on site, communication and relational problems may arise in construction because they have to cooperate with colleagues closely for long periods of time while carrying out extenuating physical tasks (Leung, Skitmore & Chan, 2007). In addition, workers on site are exposed to several physical risks (e.g. to cope with different climate conditions, hard manual activities, and unsafe locations). Thus, their daily work productivity strongly influences the full realisation of assignments in terms of time, financial resources to spend, and overall quality (Derr *et al*, 2001).

The performance of construction employees is sometime inadequate due to the impact of different variables including work-related factors, individual characteristics, lifestyle, health problems, etc. (Alavinia, van Duivenbooden & Burdorf, 2007). Last but not least, it has been demonstrated that the environment of the CI is fairly hazardous in comparison with other sectors, and construction workers have to be trained to cope with a number of problems and risk tasks (Mitropoulos and Memarian, 2012) such as awkward postural requirements (e.g. static sitting), high dust and noise levels, extreme temperatures and shift work (Chen et al., 2017). These all compound the stress levels in construction.

*Consequences of stress in the CI*

The consequences of stress in the CI are well reported. Leung et al. (2010) established that different types of stress at work *reduced social interactions* and yielded *low functionality*. Leung et al. (2007) also reported high level of *dissatisfaction* among construction workers (in relation to organizational difficulties such as deadlines, time pressure, and job-assignments), connected largely with a perceived absence of independence and/or low levels of remuneration. In a study of Hong Kong CI workers, burdensome administration activities, and absence of resources to acquire new abilities, were found by Ng *et al*. (2005) to contribute to *interpersonal conflicts* and *low level of motivation*. In line with studies conducted in other industry contexts, the presence of work stress is related with *sub-optimal functioning* in construction (Djebarni 1996). Work stress is associated with the presence of negative incidents like *injuries* and *accidents* (Goldenhar *et al*. 2003; Leung *et al*. 2010).

In Australia, Haynes and Love (2004) recognised how three sources of stress i) job-assignments, ii) time pressure, and iii) long period far from nuclear family combine to cause *family problems*, *interpersonal conflicts* and a feeling of *exhaustion*. Lingard and Francis (2004) described how site-based professionals worked a high number of hours and coped with a high level of tension, a long-term outcome resulting from constant experience of stressful events, than their colleagues that are working in other departments of the same organizations. Love *et al*. (2010) described how construction

workers employed in contracting organizations experience high levels of stress and scarce organizational support compared with those employed in consulting organizations. In their research Sang *et al*. (2007) concluded that women architects have considerably more intense levels of *work-family problems*, *poorer job satisfaction*, and *greater burnout probability* than their male counterparts.

The associations between work-related stress and a number of physical and emotional disorders are evident, notwithstanding it is problematic to conclude on a direct causal relationship between these due to the fact that many conditions and disorders generally ascribed to stress have numerous origins. The consequences of work-related stress influence physiological, cognitive, and emotional changes such as (1) *physical alterations* (e.g., sleep disorders, cardio-vascular problems, gastrointestinal upsets, sexual disinterest), (2) *cognitive disturbances* (e.g., loss of attention and low executive functions), and (3) *emotional disorders* (e.g., mood changes) (Chan et al., 2012; Bowen et al., 2014).

Although chronic stressful events have a long-term negative effect, occasional exposition to stress experiences have been linked with constructive effects in the CI, including *physiological resilience* and, in interaction with psychological coping, corresponds with higher *job performance* (even in difficult activities), *emotional stability*, *personal motivation*, and *immune system reinforcement* (Park and Fenster, 2004; Chen et al., 2017).

*Coping strategies in the CI*

Coping strategies represent the cognitive and problem-solving behaviours workers may use to handle, reduce, or tolerate stress (Folkman, 2013). Following the classic psychological research on coping by Lazarus & Folkman (1984), the great part of research studies identified two types of coping classes, which are:

a) adaptive strategies such as (1) problem-solving planning, (2) confrontive coping, (3) cognitive reappraisal, (4) instrumental support seeking, and (5) acceptance of responsibility,
b) non-adaptive strategies such as, (6) distancing (7) escapism, and (8) emotional discharge.

The paper of Chan et al. (2012) gives an interesting preliminary description of these coping mechanisms in the CI as explained below.

1. *Problem solving planning* denotes the ability to self-manage, and face problems and their consequences willingly (Yip *et al*., 2008). For example, construction employees having a high work overload (e.g. too many tasks and time deadlines for project managers) can manage their time differently, and use resource allocation to condense their workload. This coping skill was identified to be useful for improving the job performance of construction employees (Yip & Rowlinson, 2006; Yip *et al*., 2008).
2. *Positive reappraisal* is defined as the ability to reframe work-related difficulties by giving a different meaning to them and focussing on personal growth which workers may obtain from their experience (Ibem et al., 2011; Chan et al., 2012; Chan et al., 2014). People using this coping skill learn to reconsider stressful events or problems arising in construction projects so that they recognise

themselves as able to reinforce their personal capabilities. Positive reappraisal is often used as an effective strategy to experience more positive emotions (Rivera, 2008; Yip et al., 2008).

3. *Confrontive coping* is defined as specific antagonistic efforts to reframe a stressful situation or context and it comprises a certain dose of opposition and risk taking behaviour (e.g. Haynes & Love, 2004). In construction contexts, some employees may adopt this coping skill when their projects show inadequate resources and they want to propose to their superiors or advisors a means of re-allocation these resources (Melia et al., 2008). It has been also shown that the absence of confrontive attitude and work commitment is a highly impacting factor in dealing with urgency or disasters (Chang-Richards et al., 2017).
4. *Instrumental support seeking* is a strategy used when a person is looking for instrumental advice or assistance from groups such as collaborators, associates or colleagues (Leung *et al*., 2014). Construction is characterised by frequent exchanges with other colleagues and it is quite common to refer to some colleagues for assistance in some areas of work (such as engineering, safety, etc.) or to solve some problematic issues being faced during projects. The use of instrumental support seeking can actually improve teamwork, resulting in better implementation of projects and getting better outcomes (Agumba & Fester, 2010; Conchie et al, 2013.).
5. *Acceptance of responsibility* is the ability of each employee to recognise his or her own role in the project, and accept responsibility for the possible problems that may arise (Ibem et al., 2011). For example, project managers often take responsibility for reassessing the time and deadlines of the projects in which they are primarily involved so as to direct better the process towards ending successfully (Yip et al., 2008; Chan et al., 2014; Chan et al., 2016). Accepting responsibility was found to be a coping skill commonly used among East Asian construction employees (Enshassi et al., 2015; Leung et al., 2010).

   Under the non-adaptive strategies:
6. *Escapism* is a modality of thinking, in which a person tries to negate or avoid problematic issues (Bowen et al., 2014). Construction and indeed other types of employees using this coping mechanism think that problems will solve themselves without them taking any operative action. This may be a highly optimistic bias as unlucky circumstances may not disappear. Therefore, escapism is linked with low performance and low outcomes among construction employees (Leung et al., 2006; Wedewatta et al., 2011; Leung et al., 2012).
7. *Distancing* is a mechanism to isolate oneself from a problem without thinking about positive solutions (Folkman, 2013). Construction employees using this mechanism tend to continue their activities as if nothing is happening, negating any type of problems. In general, distancing results in negative health and organizational outcomes (Lingard & Francis, 2008; Yip et al, 2008).
8. *Emotional discharge* is a behavioural manifestation of negative emotions like tension, anger or annoyance (Leung *et al*., 2012). Construction professionals using this mechanism have demonstrated some unhealthy lifestyle behaviours to cope with stress such as smoking and drinking (Lingard & Turner, 2015).

A number of authors indicate that people tend to use these substances to improve their psychological status, decrease anxiety, and handle work stressors. Nevertheless, a clear indication to highlight a direct correlation between stress at work and drug consumption has been unfounded. Bacharach *et al*. (2002) report results from a male

blue-collar worker sample that suggest the relationship between the workplace risk factors and problem drinking may be complex. Psychological factors may impact on this correlation such as personality traits, re-existing emotional disorders, and resilience ability (Crum *et al*., 1995). The attitude of substance abuse, may be moderated or mediated by the workplace culture. In the context of alcohol consumption, if the culture of the workplace is tolerant about drinking, it is more probable to find a higher percentage of workers with a drinking-problem. For example, in an Israeli study of male blue-collar workers, the positive correlation between stress and alcohol was considerably evident among workers whose organizational context was tolerant about drinking (Biron *et al*. 2011). Previous research has revealed a permissive drinking culture among construction industry workers (Iacuone, 2005).

Similar results may also be applied to tobacco consumption and illegal drug-use (Frone, 2008). Research shows that tobacco smoking increases in relation to elevated stress (Conway et al. 1981; Yi & Chan, 2015) and that tobacco may have a temporary "mitigated effect" on stress (Juliano and Brandon, 2002). Chronic smokers report that cigarettes help them to achieve a state of relief, but also stated feeling much more stressed than non-smokers (Parrott, 2000). This direct correlation between smoking and relax sensation determines a strong routine pattern of smoking. However, when people stop smoking, they gradually become less stressed over time (Parrott 2000).
Stress is a recognised cause in the development of addiction behaviour; the more persistent, reiterated, or protracted the stress, the bigger the uncontrollability and instability of the stressful event, the lower the sense of resilience or flexibility, and the bigger the amount of the stress reaction and risk for emotional and physiological dysregulation (Singh 2008). Thus, the dimensions of persistence, controllability, predictableness, and flexibility are important in comprehending the function of stress in determining noxious behaviours such as addiction.

Studies also propose suggestive distinctions between the coping mechanisms used by men and women in the CI. In a study of mostly white construction workers (white-collars) conducted in the United States, males were more expected to report alcohol consumption as a strategy of coping, while females were more expected to use cognitive strategies like a direct action or problem solving (Gianakos, 2000). However, when women are employed as construction workers, they have a greater probability to abuse alcohol and smoke than women in other job sectors (Cunradi *et al*., 2014). Crum *et al*. (1995) established that men were more likely to develop alcohol disorders if their activities were considered highly demanding from a psychological point of view (e.g. high concentration, difficult problem-solving procedures, emotional impacting) and low control. In that study, no considerable risk was identified for women. Similarly, Wiesner *et al*. (2005) report that job stress is linked to heavy alcohol-use and the use of illicit drugs among men but not among women. Based on these considerations, the use of non-adaptive coping strategies is a particular issue among males in the construction industry.

However, not all emotional discharge behaviours are used in a maladaptive way. An innovative way to cope with stress using emotional discharge is the use of specific activities of meditation and relaxation. These types of activities are proposed as an alternative way to cope with stress, and their effectiveness has been recognized in reducing stress, addressing different health problems that may arise in the job place,

and enhancing quality of life (Leung et al., 2016). An increase in meditation and relaxation may contribute to a progressive improvement on individuals' physiological health (e.g., reinforcing body endurance), emotional health (e.g., enhancing attention to regulation), and behaviour (e.g., supporting positive reappraisal).

## SUMMARY

The findings described in this paper may inspire and suggest future points of discussion for CI research. A clear argument of departure is provided for further exploration. The results offered by the research described in this paper offer a preliminary examination of the work stress experienced by construction professionals; associated psychological, physiological, and sociological effects; and different coping mechanisms adopted by workers in attempts to alleviate their condition, in a job context characterized by unpredictability, time-pressure and physical efforts.

The stress levels experienced by CI professionals are considerably high as to cause concern not only for the health of individual professionals but also for the continuing efficiency of their activities in the construction industry. Research devoted to promoting the health of construction professions should have a vigilant eye on stress and consider what measures of support are necessary for their professional members. The negative strategies to cope with of stress (including abuse of substances like alcohol, nicotine, and other drugs) have an inexorable amplified effect from the single individual to his/her family system and extended families to communities and thus to society as a whole.

## CONCLUSIONS AND RECOMMENDATIONS

The problems associated with people working in the CI are too important to be ignored. Researchers need to study more about the type of work undertaken by each construction profession, which aspects are unique to each group and which are common, what might make some activities more demanding than others, and what dissimilarities exist between workers in an occupation where they perceive stress differently. Besides seeking more intra-professional understanding, researchers should explore inter-professional issues.

A more comprehensive research collaboration with other disciplines such as Psychology may contribute to a better focused research, able to unify languages and theoretical principles in the real context of the CI. We found no information about the presence of professional psychologists (for study co-conduction or supervision) in the studies we described. Future research should consider this current gap and propose a more integration of competences and resources.

In this regard, a European funded project has been started by the authors with the precise objective of evaluating the presence of stress among CI workers and to propose to them a tailored web-based intervention in conjunction with a pool of experts in Engineering, Construction disciplines and qualified psychologists.

To conclude, this paper will add value to the existing body of knowledge concerning stress and coping mechanisms in the CI and it gives new insights for evaluating future programs and interventions. Training and educational interventions are suggested for

professionals in the CI on how to cope with stress and stress management. This review work will be valuable to all academicians and researchers involved in the construction workforce and health in the construction industry in general.

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